Division 10 – FDR

Philip Moxley

October 25, 2016
Beginning of FDR - Division 10

- Union County- Waxhaw Creek Road – Approx. 2.0 miles in 1997
- Road tore up by bridge replacement project hauling in fill material
- Reclaimed with addition of some lime and retreated
- Cabarrus County- Crisco Road- Was part of alignment of Kannapolis Parkway
Year 2011 - Turn Key Lets and Hourly Contracts

- 17.50 miles in four counties
- Our goal at the time was to leave riding surface at Asphalt Surface Treatment
- State Forces was performing the chip seal
- We have since paved over some of these roads with 1” of SF9.5A
Year 2012 Turn Key Lets

- Completed 3.2 miles in Union County
- Experimented with some different specs in attempts to get a more consistent typical section
- Included asphalt overlay
Year 2014 – State Forces Working with Contractor to Mix and Spread Cement

• These roads covered four counties with majority in Union County
• Maintenance Yards widen maps ahead of reclamation
• Contractor is laying the cement and mixing while our Bituminous Crew is performing the grading, compaction and chip seal
• Pave with 1” SF9.5A next paving season
• Most Anson County roads are torn up by logging operations – 500 ADT would be high end as far as traffic
• Up to approximately 2000 ADT for some roads in Union
• One road is access to county landfill
• One road was detour for NC 200 traffic due to bridge replacement project
• 14.50 miles in total
Year 2015 – Pavement Preservation Funding Includes Reclamation as Scope of Work

- Started including reclamation work in our annual contract resurfacing lets.
- When possible we like to reclaim the roads and apply double seal and wait to the next paving season to place plant mix.
- Some roads may remain with AST
- Currently State Forces widen prior to reclamation
- Contractor does chip seal and overlay
- Dedicated Funding mandates 80% contract work by 2018
Division FDR Maps – Approx. 75 miles
Division FDR Maps Up To 2017 Lets
Case Study: SR 1341, 12 Mile Creek Road
Union County

• Description: From SR 1346, Beulah Church Road to NC 84
• Length: 1.5 miles
• Width: 22 feet
• ADT: 3500
• PCS Rating: 38
SR 1341, 12 Mile Creek Road
Twelve Mile Creek Road
Twelve Mile Creek Road
Widening Prior to Reclamation

• Widening not included in contract
• Approximately 1 foot widening accomplished by state force account crews
Channel for Widening
Channel for Widening
Channel for Widening
Close up of Channeling Attachment
Widening Machine Placing ABC Aggregate
Widening Machine Placing ABC Aggregate
Picking up Waste Material with Athey Loader
Asphalt Driveways
Concrete Driveway
Twelve Mile Creek Road- Brick Paver Drive
Traffic Concerns: 3500 ADT

• Intermediate Completion Time
• Due to High School, Middle School and Elementary School traffic specified construction during summer when schools were not operating
Map of schools
Staking Centerline of Road

• Once reclaimed it is not obvious where the centerline use to be so need a reference point is needed to re-establish

• Important to have reclaimed base extend beyond edge of pavement
Twelve Mile Creek Road
Twelve Mile Creek Road
Construction Sequence

• Contractor reclaimed one side of roadway at a time starting just south of Deal Road.
• Required to seal reclaimed base with chip seal the following day.
Construction Sequence
Twelve Mile Creek Road
Twelve Mile Creek Road
Aggregate for Asphalt Surface Treatment

• Important to use aggregate that works well with chip seal; we prefer to chip seal one paving season and place plant mix the next.
• Some contractors may not be proficient with chip seals.
• Recently using a light colored granite out of South Carolina.
• We have had some issues with this particular aggregate raveling off the road.
Armsfield Road
# 78M Aggregate Raveling
#78M Aggregate Raveling Into Winter Months
#78M Aggregate Raveling Into Winter Months
Unit Prices

- 12” Reclamation/sq. yd: $3.00/$2.65
- Cement/ton @ 67lbs/sq. yd: $135/$130
- Widening/sh. mile: approx. $35k
- S9.5B @ 1.5”: $43/ton / $35/ton
- AST Double Seal: $1.80 sq. yd/ $1.75 sq.yd
- Emulsion: $2.00/gal
Case Study #2

- Stanback Ferry Road in Anson County
Map of Stanback Ferry Road
Case Study: SR 1703, Stanback Ferry Road in Anson County

• Description: From SR 1711, Doc Wyatt Road to SR 1704 Ingram Mountain Road
• Length: 8.0 miles
• Width: 18 feet
• ADT: 200
• PCS Rating: 49-60
Stanback Ferry Road Anson County
Stanback Ferry Road Anson County
Stanback Ferry Road Anson County
Stanback Ferry Road Anson County
Reclaiming
Reclaiming
Reclaiming
Finish Grading and Compacting
Finish Grading and Compacting
Finish Grading and Compacting
Stanback Ferry Road
Utility Conflicts
Utility Conflicts
Utility Conflicts
Utility Conflicts
Bury

The minimum depth of bury for cased and uncased construction shall be as follows:

a. Crossings under all roadways (including shoulders) of electric power and communication lines ............... 3'
b. Crossings under ditches (paved and unpaved) and sidewalks of electric power and communication lines ........ 2'
c. Longitudinal electric power primary ....................... 3'
d. Longitudinal electric power secondary, and trenched communication lines. ............... 2'
e. Plowed-in communication lines .................. 18"
Cement Dust from Unloading Operation
Cement Dust from Unloading Operation
Reference Stakes
Finished AST Surface
Finished AST Surface
FORE: Fully Operated Rental Agreement

- 12” Reclamation/sq. yd: $ 5.30
- Cement/ton @ 72lbs/sq. yd: $ 155.00
- AST Double/Triple Seal: $ .92 sq. yd
- Emulsion CRS-2L: $1.20/gal
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<thead>
<tr>
<th>Work Function</th>
<th>DOT Equipment Cost ($)</th>
<th>DOT Labor Cost ($)</th>
<th>Contractor Cost</th>
<th>Cement Cost</th>
<th>Cement Rate</th>
<th>Total Cost</th>
<th>Square Yards</th>
<th>Unit Cost</th>
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<td>$6,951.64</td>
<td>$5,646.00</td>
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